

PRE-CLINICAL CLERKSHIP, YEAR 1

Physical Examination

Introduction

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The examination of the body is fundamental to the practice of medicine. Without these physical examination skills, diagnoses are missed altogether or appropriate clinical questions--necessary to selectively order diagnostic tests and treatments—are not entertained. This syllabus supports learning goals for the introductory physical examination sessions in the Pre-Clinical Clerkship, Year 1: to build skills in performing in a humane and systematic way the techniques of the examination in the healthy patient and to build skills in detecting and describing normal findings.

The mastery of physical examination calls for the integration of cognitive, technical, and perceptual discrimination skills. The content and teaching and learning activities in this syllabus are based on our own research on the learning tasks involved in acquiring these complex skills; on student and intern reports of the most challenging technical maneuvers and most difficult to discriminate normal from abnormal findings; and the error patterns on the performance of focused physical exams by over 2200 students across different years from ten medical schools. Technical maneuvers also incorporate available data from the literature comparing the reliability of various techniques with gold standard diagnostic sound, pressure, or imaging tests.

Hands-on Teaching and Learning

Learning and building physical examination skills is a lifelong process. All sessions in this syllabus promote demonstration, practice, and observation-based feedback of basic hands-on skills in meaningful ways they will be accessed in the practice of medicine. Students will learn and refine performance of focused exams of organ systems and a smooth sequential flow for the head-to-toe or comprehensive physical examination. Students will learn and refine skills in appreciating and describing normal findings.



There are two types of hands-on sessions:

Introductory focused physical exam lab sessions (Sessions #1 - 7)
Component skills of focused exams of regions of the body will be introduced in seven one-hour lab sessions in which each pair of students meet for hands-on demonstration and practice each week with their dedicated physical examination teacher in the Clinical Exam Suites in Harkness. There will also be an additional session (**#8**) to practice and receive individualized, observation-based feedback on the performance of the head-to-toe physical examination. These lab sessions are indicated by **pink** frontispieces.



**Building focused and comprehensive physical exam tutorial sessions
(Sessions # 1 – 9)**

Students will also meet for one and a half to two hours per week for nine weeks with their clinical tutors. The first part of each session will provide opportunities for practicing and receiving more individualized, observationbased feedback on the focused exam skills introduced in the companion lab session. The second part of each session will provide opportunities for building and practicing a sequential flow for the head to toe or comprehensive exam (indicated by **blue** flow checklists). The last two tutorial sessions (**#8-9**) are dedicated to practicing and receiving individualized, observation-based feedback on the performance of the comprehensive physical exam.

Guiding Principles

It is helpful to consider a number of guiding principles to make the best use of this valuable hands-on teaching time.

Approach to the patient

Develop an approach to the patient that preserves patient dignity, modesty, and comfort. It is interesting to note that Laennec developed the stethoscope in 1816 to preserve the modesty of a female patient as he examined her chest.

Systematic approach to physical exam maneuvers

As we begin teaching the clinical examination, we will demonstrate four general types of techniques that we will use to examine all the organ systems:

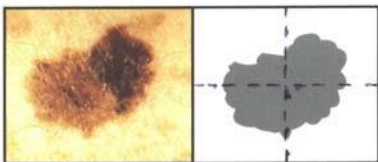
1. Inspection
2. Palpation
3. Percussion
4. Auscultation.

Clustering maneuvers in these four categories will help students to develop and remember a systematic approach and a flow for the head-to-toe examination.

General approach to appreciating clinical observations

The whole art of medicine is in observation. (1) Observe, record, tabulate, communicate. Use your five senses...learn to see, learn to hear, learn to feel, learn to smell, and know by practice alone you can become expert.(2)

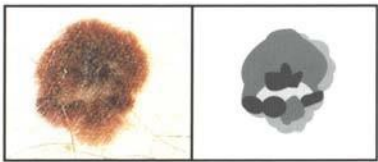
Train your eyes to see clinically by structuring your observations to include features that are important, and excluding other features. A good analogy is creating a guide for a friend traveling from the Clinical Exam Suites at Yale to a house on Maple Avenue in Cheshire. An aerial view is realistic, but by capturing every single road and building it overwhelms the navigator with extraneous details. A map, or conceptual representation of the pertinent landmarks and roads, is much easier for the navigator to follow. Consider the following examples of training your eyes to look at key features of pigmented skin lesions by focusing on conceptual representations of symmetry, border, color, or diameter:



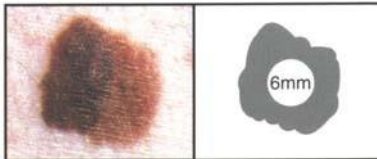
Symmetry



Border

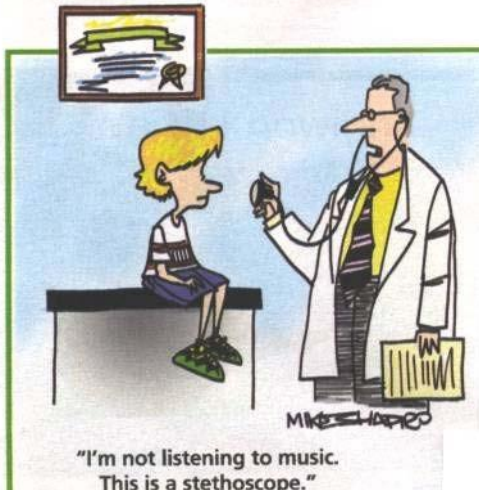


Color



Diameter

Training your ears to hear clinically may also be enhanced by forming visual conceptual representations of key features of sounds. This will be demonstrated when you learn to listen to lung sounds.



You see only what you look for, you recognize only what you know.

One of the students' major goals over the next four years is detecting and recognizing normal versus abnormal findings. Become familiar with the vocabulary to describe key features of normal findings. Practice focusing on these key features and developing conceptual representations of key features of visual, auditory and tactile findings. Value the primacy of your own observations. Practice clearly describing your observations and communicating your findings to your peers and teachers. Putting your observations into words is important. It ensures you are getting practice structuring or focusing your observations around key features rather than just casually observing. Over time, structuring your observations helps you to develop conceptual representations and know the significant differences between normal and abnormal findings. If a finding is not entirely evident, simply describe what you actually observe.

Approach to teaching and learning

Mastering the skills of the physical examination is a lifelong process. At this beginning stage, students' skill acquisition will be most efficient by increasing readiness for hands-on sessions with your physical examination teacher and clinical tutor.

Study Sections 1 – 4 of the syllabus in preparation for each lab and clinical tutorial session:

- Review key surface anatomy landmarks introduced in Anatomy by Drs. Lawrence Rizzolo and William Stewart.



These will build on existing knowledge and provide meaningful roadmaps for positioning and sequencing the physical examination maneuvers. To help you develop a deeper understanding of relationships of internal organs and surface landmarks Drs.

- Rizzolo, Stewart, and Walters have developed lesson plans for the lungs and abdomen using VH Dissector Pro 4.5 based on the Visible Human Project. These tutorials are available on the computers in the Clinical Exam Suites and you are encouraged to work with these before the Lung Exam and Abdominal Exam sessions. Students are expected to come to the physical examination lab and tutorial able to identify the landmarks cold.
- Review the positioning and sequencing of maneuvers and handling of instruments in the syllabus, textbook, companion CD, and neurologic exam website. Students are expected to become familiar with these steps before coming to the lab and tutorial.
 - Review the vocabulary to describe the dimensions of normal physical findings prior to each session.
 - Do the practice exercises to begin developing some of the technical and perceptual discrimination skills you will see and perform with your teacher and tutor.

Follow Sections 4 – 6 of the syllabus outlining maneuvers and teaching tips to complete with your teacher and tutor during each lab and tutorial session:

- Complete the checklist of maneuvers – these will be modeled by the teacher and tutor, and students will practice with guidance and feedback.
- Extra demonstration and practice of challenging procedural techniques—emphasizing the most reliable way to perform maneuvers.

- Extra illustration and practice detecting and describing the defining features of challenging normal findings.

Follow Section 7 of the syllabus to describe and communicate clinical observations to your teacher during each lab session:

- During each physical examination session, while you are performing each maneuver focus on structure your observations and make note of the key features of the findings. Send an e-copy of a brief written description of your findings to your teacher (and cc: cheryl.walters@yale.edu) within 24 hours.
- The primary purpose of these exercises is to develop practice and confidence in focusing your observations and describing what you find on the physical examination.
- The secondary purpose is to begin to learn the format and terminology you will need to do a complete write-up of the history and physical examination in the second year.
- By tradition, doctors use a modified “bullet” format by beginning a new line for each new body region to communicate their findings. This format gives you a template and allows colleagues to quickly appreciate areas of interest. Key features are listed in Section 7 for each lab to guide your description and communication of findings.

Write-up Submission Process:

Describe the findings of the part of the physical examination you practiced in the session in a brief write-up.

E-mail your write-up to your teacher (and cc: cheryl.walters@yale.edu) within 24 hours.

Your write-up will be reviewed and returned with brief comments to you by e-mail by the day before the next week’s physical examination session by your physical examination teacher (unless you have made other arrangements with your physical examination teacher).

Examples: the specific findings to include are listed in Section 7 of each weekly session. There is also a section in the Swartz textbook on “write-up” and you can review the part you are practicing each week and use it as another example.

Follow Section 8 of the syllabus to build a sequential flow of the head to toe exam to practice each week with your tutor:

- Notice that the flow builds sequentially from session to session. Building and reinforcing your flow sequence each week will help you to master developing a smooth flow for the comprehensive examination. In our surveys of students and interns, developing a flow for the examination was written in as the sixth most challenging technical “maneuver” of physical examination skills.